

Appl'n No: 10/568,668
Amdt dated April 5, 2007
Reply to Office action of January 5, 2007

AMENDMENTS TO THE DRAWINGS

The attached replacement sheet of drawings, including Figure 11, replaces the previously submitted sheet of drawings including Figure 11. More specifically, Applicant has amended Figure 11. The replacement sheet has been clearly labeled "Replacement Sheet" in the page header.

Attachment: 1 Replacement Sheet of drawings including Figure 11

REMARKS

Claims 1-8 remain in the application. Claims 1, and 3-5 have been amended. Claims 1, 3-5, and 8 are in independent form.

Specification

The specification has been amended to clarify terminology set forth originally in the application as filed. Applicant attests that no new matter has been added thereto.

Drawings

The Examiner has objected to the drawings under 37 C.F.R. § 1.83(a) stating that the “drawings must show every feature of the invention specified in the claims.” In response, Applicant has attached 1 replacement sheet of drawings hereto directly following these Remarks. The replacement sheet has been labeled “Replacement Sheet” in the page header as per 37 C.F.R. § 1.121(d).

In amended Figure 11, the following features of the invention specified in the claims have been identified: out-of-bound zone (left); park position; start wipe zone; wipe zone; end-of-travel position; and out-of-bound zone (right).

In light of the foregoing, Applicant respectfully requests that the objection to the drawings under 37 C.F.R. § 1.83(a) be withdrawn.

Claim Rejections

The Examiner has objected to claim 2 due to the following informality, “the park zone being intermediate of the wipe zone and the out-of-bound zone.” The Examiner states that “the position of the zone does [not] follow the specification.” In response, Applicant respectfully points out that the specification provides support for the park zone between or intermediate of the out-of-bound zone and the wipe zone in the table set out at page 5, between paragraphs

[0053] and [0054]. Further, the drawings provide support for the park zone between the out-of-bound zone and the wipe zone, at Figure 11.

In light of the foregoing, Applicant respectfully requests that the objection to claim 2 be withdrawn.

Claim Rejections – 35 U.S.C. § 102

Claims 1-7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent 6,249,098 to Miyazaki et al. (“the ‘098 reference”). Applicant respectfully traverses the rejection.

The ‘098 reference discloses a wiper blade 1 that reciprocates between an upper reversing position and a lower reversing position in response to rotation of a wiper motor 5. An upper pre-reversing position is defined inside of the upper reversing position and a lower pre-reversing position is defined inside of the lower reversing position. The wiper motor 5 includes a rotary shaft 12 having a worm 13 which is in meshing engagement with a gear wheel 15. The gear wheel 15 in turn is connected to an output shaft 7 for moving the wiper blade 1. A rotation sensor 17 detects a magnet ring 16 fixed to the rotary shaft 12 and produces pulse signals in response to the rotation of the wiper motor 5. A CPU 21 counts the pulse signals produced from the rotation sensor 17 when a position detection sensor 18 detects an arrival of the wiper blade 1 at one of the upper or lower pre-reversing positions. The CPU 21 sends a control signal to a drive circuit 26 and reverses the direction of the wiper motor 5 when the pulse count value reaches a predetermined value. The position detection sensor 18 includes stationary contacts SCM1, SCM2, SCM3 mounted to a casing 14 and a movable conductive plate 19 fixed to the gear wheel 15. If the position detection sensor 18 determines that the wiper blade 1 reaches a non-entering area before the pulse count value reaches the predetermined value, the CPU 21 sends a control signal to the drive circuit 26 and reverses the direction of the wiper motor 5.

Claim 1, as amended to clarify the invention, includes the limitation of “a first detector including a detectant fixed to a rotary body which rotates in synchronism with the wiper and a reader fixed in position and in non-contact relation with the detectant, the first detector

identifying a plurality of distinct angular zones for the wiper, including a wipe zone and a wiper out-of-bound (“OOB”) zone.”

While the ‘098 reference discloses a position detection sensor 18 for detecting the rotational position or angle of a wiper motor 5 and hence the position of a wiper blade 1, it does not disclose a first detector including a detectant (48) fixed to a rotary body (42) and a reader (80a, 80b) fixed in position and in non-contact relation with the detectant (48). In the ‘098 reference, the position detection sensor 18 includes three stationary contacts SCM1, SCM2, and SCM3 and a conductive plate 19 as a movable contact. The contacts SCM1-SCM3, and a ground contact G are fixed to protrude inwardly from a casing 14 in such a manner that the conductive plate 19 fixed to one side of a gear wheel 15 *slides over* (i.e. is in contact relation with) the contacts SCM1-SCM3, G. The contacts SCM1-SCM3, G function as electrical brushes.

In contradistinction, claim 1, as amended to clarify the invention, claims a first detector that includes a detectant (48) that is fixed to a rotary body (42) and a reader (80a, 80b) that is fixed in position and in *non-contact relation* with the detectant (48).

Claim 2 depends from claim 1 and, as such, is construed to incorporate by reference all of the limitations of the claim to which it refers, *see* 35 U.S.C. § 112, fourth paragraph. Claim 1, as amended to clarify the invention, claims a first detector including a detectant (48) fixed to a rotary body (42) and a reader (80a, 80b) fixed in position and in *non-contact relation* with the detectant (48). Therefore, claim 2 must be read as including the limitation of a first detector including a detectant (48) fixed to a rotary body (42) and a reader (80a, 80b) fixed in position and in *non-contact relation* with the detectant (48).

Claim 3, as amended to clarify the invention, includes the limitation of “a first detector including a detectant fixed to a rotary body which rotates in synchronism with the wiper and a reader fixed in position and in non-contact relation with the detectant, the first detector identifying a plurality of distinct angular zones across the entire range of motion of the wiper, said zones including a wiper park zone, a wipe zone, and a wiper out-of-bound (“OOB”) zone.”

While the '098 reference discloses a position detection sensor 18 for detecting the rotational position or angle of a wiper motor 5 and hence the position of a wiper blade 1, it does not disclose a first detector including a detectant (48) fixed to a rotary body (42) and a reader (80a, 80b) fixed in position and in non-contact relation with the detectant (48). In the '098 reference, the position detection sensor 18 includes three stationary contacts SCM1, SCM2, and SCM3 and a conductive plate 19 as a movable contact. The contacts SCM1-SCM3, and a ground contact G are fixed to protrude inwardly from a casing 14 in such a manner that the conductive plate 19 fixed to one side of a gear wheel 15 *slides over* (i.e. is in contact relation with) the contacts SCM1-SCM3, G. The contacts SCM1-SCM3, G function as electrical brushes.

In contradistinction, claim 3, as amended to clarify the invention, claims a first detector that includes a detectant (48) that is fixed to a rotary body (42) and a reader (80a, 80b) that is fixed in position and in *non-contact relation* with the detectant (48).

Claim 4, as amended to clarify the invention, includes the limitation of "a first detector including a detectant fixed to a rotary body which rotates in synchronism with the wiper and a reader fixed in position and in non-contact relation with the detectant, the first detector identifying at least four distinct angular zones for the wiper, including a wiper park zone, a wiper turning point zone, a wipe zone, and a wiper out-of-bound ("OOB") zone."

While the '098 reference discloses a position detection sensor 18 for detecting the rotational position or angle of a wiper motor 5 and hence the position of a wiper blade 1, it does not disclose a first detector including a detectant (48) fixed to a rotary body (42) and a reader (80a, 80b) fixed in position and in non-contact relation with the detectant (48). In the '098 reference, the position detection sensor 18 includes three stationary contacts SCM1, SCM2, and SCM3 and a conductive plate 19 as a movable contact. The contacts SCM1-SCM3, and a ground contact G are fixed to protrude inwardly from a casing 14 in such a manner that the conductive plate 19 fixed to one side of a gear wheel 15 *slides over* (i.e. is in contact relation with) the contacts SCM1-SCM3, G. The contacts SCM1-SCM3, G function as electrical brushes.

In contradistinction, claim 4, as amended to clarify the invention, claims a first detector that includes a detectant (48) that is fixed to a rotary body (42) and a reader (80a, 80b) that is fixed in position and in *non-contact relation* with the detectant (48).

Claim 5, as amended to clarify the invention, includes the limitation of "a non-mechanically actuated first detector, including a detectant which provides at least four detectable binary state sectors along a path and two readers situated along the path that are spaced apart a distance less than the length of the shortest sector along the path, wherein the detectant is fixed to a rotary body and rotates in synchronism with the wiper and the readers are fixed in position and in non-contact relation with the detectant."

While the '098 reference discloses a position detection sensor 18 for detecting the rotational position or angle of a wiper motor 5 and hence the position of a wiper blade 1, it does not disclose a *non-mechanically actuated* first detector including a detectant (48) fixed to a rotary body (42) and two readers (80a, 80b) fixed in position and in *non-contact relation* with the detectant (48). In the '098 reference, the position detection sensor 18 includes three stationary contacts SCM1, SCM2, and SCM3 and a conductive plate 19 as a movable contact. The contacts SCM1-SCM3, and a ground contact G are fixed to protrude inwardly from a casing 14 in such a manner that the conductive plate 19 fixed to one side of a gear wheel 15 *slides over* (i.e. is in contact relation with) the contacts SCM1-SCM3, G thereby *mechanically actuating* the position detection sensor 18.

In contradistinction, claim 5, as amended to clarify the invention, claims a *non-mechanically actuated* first detector that includes a detectant (48) that is fixed to a rotary body (42) and two readers (80a, 80b) that are fixed in position and in *non-contact relation* with the detectant (48).

Claim 6 depends from claim 5 and, as such, is construed to incorporate by reference all of the limitations of the claim to which it refers, *see 35 U.S.C. § 112, fourth paragraph*. Claim 5, as amended to clarify the invention, claims a *non-mechanically actuated* first detector including a detectant (48) fixed to a rotary body (42) and two readers (80a, 80b) that are fixed in position

and in *non-contact relation* with the detectant (48). Therefore, claim 6 must be read as including the limitation of a *non-mechanically actuated* first detector including a detectant (48) fixed to a rotary body (42) and two readers (80a, 80b) that are fixed in position and in *non-contact relation* with the detectant (48).

Applicant respectfully points out that the Examiner has not suggested any reason for the rejection of claim 7. Furthermore, claim 7 depends from claim 5 and, as such, is construed to incorporate by reference all of the limitations of the claim to which it refers, *see* 35 U.S.C. § 112, fourth paragraph. Claim 5, as amended to clarify the invention, claims a *non-mechanically actuated* first detector including a detectant (48) fixed to a rotary body (42) and two readers (80a, 80b) that are fixed in position and in *non-contact relation* with the detectant (48). Therefore, claim 7 must be read as including the limitation of a *non-mechanically actuated* first detector including a detectant (48) fixed to a rotary body (42) and two readers (80a, 80b) that are fixed in position and in *non-contact relation* with the detectant (48).

Therefore, Applicant respectfully requests that the rejection of independent claim 1, and claim 2 depending therefrom, independent claims 3 and 4, and independent claim 5, and claims 6 and 7 depending therefrom, under 35 U.S.C. § 102(b) as being anticipated by the '098 reference be withdrawn.

The Examiner has indicated that claim 8 is allowable subject matter.

It is respectfully submitted that this patent application is in condition for allowance, which allowance is respectfully solicited. If the Examiner has any questions regarding this amendment or the patent application, the Examiner is invited to contact the undersigned.

The Commissioner is hereby authorized to charge any additional fee associated with this Communication to Deposit Account No. 50-1759. A duplicate of this form is attached.

Appl'n No: 10/508,668
Amdt dated April 5, 2007
Reply to Office action of January 5, 2007

Date: 4/5/07
Attorney Docket No: 19339-104122

Respectfully submitted,



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